

Michael Wilson

1633

HL6

PAGE: 1

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/391,606

DATE: 03/07/2000
TIME: 13:47:56

Input Set: I391606.RAW

This Raw Listing contains the General Information
Section and up to first 5 pages.

ENTERED

RECEIVED
MAR 20 2000
TC 1600 MAIL ROOM

1 <110> APPLICANT: Murdin, Andrew D
2 Dunn, Pamela L
3 <120> TITLE OF INVENTION: IMMUNOGENIC COMPOSITIONS FOR PROTECTION AGAINST
4 CHLAMYDIAL INFECTION
5 <130> FILE REFERENCE: 1038-971 MIS:jb
6 <140> CURRENT APPLICATION NUMBER: US/09/391,606
7 <141> CURRENT FILING DATE: 1999-09-07
8 <160> NUMBER OF SEQ ID NOS: 20
9 <170> SOFTWARE: PatentIn Ver. 2.1
10 <210> SEQ ID NO 1
11 <211> LENGTH: 2545
12 <212> TYPE: DNA
13 <213> ORGANISM: Chlamydia pneumoniae
14 <400> SEQUENCE: 1
15 ttgcggtgct gttaacggtg gagggcagtg tagtctgagc agtactcggt gctgccgcgc 60
16 gcgccaccag acataatagc tgacagacta acagactggt cctttccatg ggtcttttct 120
17 gcagtcaccg tcgtcgacac gtgtgatcag atatcgcggc cgctctagac cgccatgaca 180
18 aaaaaacatt atgcttggtg tgtagaaggg attctcaatc gtttgccata acagtttttt 240
19 gtgaaatgta gtgttgctga ctggaacaca ttctgtcctt cagaaacctc cactacagaa 300
20 aaagctgcta caaacgctat gaaatacaaa tactgtgttt ggcagtggct cgtcggaaaag 360
21 catagtcagg ttcttggtat caatggacag aaaaagcctc tatactctta tggagctttc 420
22 ttaatgaacc ctttagcaaa ggctacgaag actacgttaa atggaaaaga aaacctagct 480
23 tggtttattg gaggaacttt agggggactc agaaaagctg gagactggct tgccacagta 540
24 cgttatgagt atgtcgaagc cttgtcagtt ccagaaatag atgtttcagg gattggccgt 600
25 ggtaatttat taaagttttg gttcgcccaa gcaattgctg ctaactatga tcctaaagag 660
26 gctaatagtt ttacaaatta taaaggattt tccgtctat atatgtatgg catcacagat 720
27 tctctatcat tcagagctta tggggcttac tccaaaccag caaacgataa actcggcagt 780
28 gattttactt tccgaaagt tgcattaat tattagttag agcttttttt ttatttttta 900
29 taaaatcttt aaaaacaggc tcgcattaat tattagttag agcttttttt ttatttttta 900
30 taataaaaact aaaagatttt tattattttt tgagttttta tggttaatcc tattggtcca 960
31 ggtcctatag acgaaacaga acgcacacct cccgcagatc tttctgctca aggattggag 1020
32 gcgagtgcag caaataagag tgcggaagct caaagaatag cagggtgcgga agctaagcct 1080
33 aaagaatcta agaccgattc tgtagagcga tggagcatct tgcgttctgc agtgaatgct 1140
34 ctcatgagtc tggcagataa gctgggtatt gcttctagta acagctcgct ttctactagc 1200
35 agatctgcag acgtggactc aacgacagcg accgcacctc cgctcctcc acccagctct 1260
36 gatgattata agactcaagc gcaaacagct tacgatacta tctttacctc aacatcacta 1320
37 gctgacatac aggtgctttt ggtgagcctc caggatgctg tctaataat aaaggataca 1380
38 gcggtactg atgaggaaac cgcaatcgct gcggagtggg aaactaagaa tgccgatgca 1440
39 attaaagttg gcgcgcaa atacagaatta gcgaaatatg cttcggataa ccaagcgatt 1500
40 cttgactctt taggtaaact gacttccttc gacctcttac agactgctct tctccaatct 1560
41 gtagcaaaaca ataacaaagc agctgagctt cttaaagaga tgcaagataa cccagtagtc 1620
42 ccagggaaaa cgctgcaat tgctcaatct ttagttgagc agacagatgc tacagcgaca 1680
43 cagatagaga aagatggaaa tgcgattggg gatgcatatt ttgcaggaca gaacgctagt 1740
44 ggagctgtag aaaatgctaa atctaataac agtataagca acatagattc agctaaagca 1800

PAGE: 2

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/391,606

DATE: 03/07/2000
TIME: 13:47:56

Input Set: I391606.RAW

```

45      gcaatcgcta ctgctaagac acaaatagct gaagctcaga aaaagttccc cgactctcca 1860
46      attcttcaag aagcggaaca aatggtaata caggctgaga aagatcttaa aaatatcaaa 1920
47      cctgcagatg gttctgatgt tccaaatcca ggaactacag ttggaggctc caagcaacaa 1980
48      ggaagtagta ttggtagtat tctgttttcc atgctgttag atgatgctga aaatgagacc 2040
49      gcttccattt tgatgtctgg gtttcgtcag atgattcaca tgttcaatac ggaaaatcct 2100
50      gattctcaag ctgccaaca ggagctcgca gcacaagcta gagcagcgaa agccgctgga 2160
51      gatgacagtg ctgctgcagc gctggcagat gctcagaaag ctttagaagc ggctctaggt 2220
52      aaagctgggc aacaacaggg catactcaat gctttgggac agatcgcttc tgctgctgtt 2280
53      gtgagcgagc gagtctctcc gctgcagcaa gttctatgga tccgagctcg gtaccaagct 2340
54      tacgtagaac aaaaactcat ctcagaagag gatctgaata gcgcgctcga ccatcatcat 2400
55      catcatcatt gagttaaac ggtctccagc ttaagttaa accgctgac agcctcgact 2460
56      gtgccttcta gttgccagcc atctgttgtt tgccctccc ccgtgccttc cttgacctg 2520
57      gaaggtgcca ctcccactgt cctttt                                     2545

```

58 <210> SEQ ID NO 2

59 <211> LENGTH: 651

60 <212> TYPE: DNA

61 <213> ORGANISM: Chlamydia pneumoniae

62 <400> SEQUENCE: 2

```

63      atgacaaaaa aacattatgc ttgggttgta gaagggattc tcaatcgttt gcctaaacag 60
64      ttttttgtga aatgtagtgt tgtcgactgg aacacattcg ttccttcaga aacctccact 120
65      acagaaaaag ctgctacaaa cgctatgaaa tacaataact gtgtttggca gtggctcgtc 180
66      ggaaagcata gtcaggttcc ttggatcaat ggacagaaaa agcctctata tctttatgga 240
67      gctttcttaa tgaacccttt agcaaaggct acgaagacta cgttaaatgg aaaagaaaac 300
68      ctagcttggt ttattggagg aactttaggg ggactcagaa aagctggaga ctggtctgcc 360
69      acagtacgtt atgagtatgt cgaagccttg tcagttccag aaatagatgt ttcagggatt 420
70      ggccgtggta atttattaaa gttttggttc gccaagcaa ttgctgctaa ctatgatcct 480
71      aaagaggcta atagttttac aaattataaa ggattttccg ctctatatat gtatggcatc 540
72      acagattctc tatcattcag agcttatggg gcttactcca aaccagcaaa cgataaactc 600
73      ggcagtgatt ttactttccg aaagtttgat ctagggtataa tttcagcggt t 651

```

74 <210> SEQ ID NO 3

75 <211> LENGTH: 1470

76 <212> TYPE: DNA

77 <213> ORGANISM: Chlamydia pneumoniae

78 <400> SEQUENCE: 3

```

79      atggttaatc ctattggtcc aggtcctata gacgaaacag aacgcacacc tcccgcagat 60
80      ctttctgctc aaggattgga ggcgagtgc gcaaataaga gtgcggaagc tcaaagaata 120
81      gcagggtcgg aagctaagcc taaagaatct aagaccgatt ctgtagagcg atggagcatc 180
82      ttgcgttctg cagtgaatgc tctcatgagt ctggcagata agctgggtat tgcttctagt 240
83      aacagctcgt cttctactag cagatctgca gacgtggact caacgacagc gaccgcacct 300
84      acgctcctc caccacgctc tgatgattat aagactcaag cgcaaacagc ttacgatact 360
85      atctttacct caacatcact agctgacata caggctgctt tggtagacct ccaggatgct 420
86      gtcactaata taaaggatac agcggctact gatgaggaaa ccgcaatcgc tgcggagtgg 480
87      gaaactaaga atgccgatgc aattaaagt ggccgcgcaa ttacagaatt agcgaatat 540
88      gcttcggata accaagcgat tcttgactct ttaggtaaac tgacttcctt cgacctctta 600
89      cagactgctc ttctccaatc tgtagcaaac aataacaaag cagctgagct tcttaaagag 660
90      atgcaagata acccagtagt cccagggaaa acgcctgcaa ttgctcaatc tttagttgat 720
91      cagacagatg ctacagcgac acagatagag aaagatggaa atgcgattgg ggatgcatat 780
92      tttgcaggac agaacgctag tggagctgta gaaaatgcta aatctaataa cagtataagc 840
93      aacatagatt cagctaaagc agcaatcgct actgctaaga cacaatagc tgaagctcag 900
94      aaaaagttcc ccgactctcc aattcttcaa gaagcggaac aaatggtaat acaggctgag 960

```

PAGE: 3

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/391,606

DATE: 03/07/2000
TIME: 13:47:56

Input Set: I391606.RAW

```

95      aaagatctta aaaatatcaa acctgcagat ggttctgatg ttccaaatcc aggaactaca 1020
96      gttggaggct ccaagcaaca aggaagtagt attggtagta ttcgtgtttc catgctgtta 1080
97      gatgatgctg aaaatgagac cgcttccatt ttgatgtctg ggtttcgtca gatgattcac 1140
98      atgttcaata cggaaaatcc tgattctcaa gctgccaac aggagctcgc agcacaagct 1200
99      agagcagcga aagccgctgg agatgacagt gctgctgcag cgctggcaga tgctcagaaa 1260
100     gctttagaag cggctctagg taaagctggg caacaacagg gcataactcaa tgctttggga 1320
101     cagatcgctt ctgctgctgt tgtgagcgca ggagtcctcc cgctgcagca agttctatgg 1380
102     atccgagctc ggtaccaagc ttacgtagaa caaaaactca tctcagaaga ggatctgaat 1440
103     agcgccgctg accatcatca tcatcatcat                                     1470
104     <210> SEQ ID NO 4
105     <211> LENGTH: 1389
106     <212> TYPE: DNA
107     <213> ORGANISM: Chlamydia pneumoniae
108     <400> SEQUENCE: 4
109     atggttaatc ctattggtcc aggtcctata gacgaaacag aacgcacacc tcccgcagat 60
110     ctttctgctc aaggattgga ggcgagtgca gcaaataaga gtgcggaagc tcaaagaata 120
111     gcaggtgcgg aagctaagcc taaagaatct aagaccgatt ctgtagagcg atggagcatc 180
112     ttgcgttctg cagtgaatgc tctcatgagt ctggcagata agctgggtat tgcttctagt 240
113     aacagctcgt cttctactag cagatctgca gacgtggact caacgacagc gaccgcacct 300
114     acgcctcctc caccacgctc tgatgattat aagactcaag cgcaaacagc ttacgatact 360
115     atctttacct caacatcact agctgacata caggctgctt tggtagacct ccaggatgct 420
116     gtcactaata taaaggatac agcggctact gatgaggaaa ccgcaatcgc tgcggagtgg 480
117     gaaactaaga atgccgatgc aattaaagt ggcgcgcaaa ttacagaatt agcgaaatat 540
118     gcttcggata accaagcgat tcttgactct ttaggtaaac tgacttcctt cgacctctta 600
119     cagactgctc ttctccaatc tgtagcaaac aataacaaag cagctgagct tcttaaagag 660
120     atgcaagata acccagtagt cccagggaaa acgcctgcaa ttgctcaatc tttagttgat 720
121     cagacagatg ctacagcgac acagatagag aaagatggaa atgcgattgg ggatgcatat 780
122     tttgcaggac agaacgctag tggagctgta gaaaatgcta aatctaataa cagtataagc 840
123     aacatagatt cagctaaagc agcaatcgct actgctaaga cacaaatagc tgaagctcag 900
124     aaaaagtccc ccgactctcc aattcttcaa gaagcggaac aaatggtaat acaggctgag 960
125     aaagatctta aaaatatcaa acctgcagat ggttctgatg ttccaaatcc aggaactaca 1020
126     gttggaggct ccaagcaaca aggaagtagt attggtagta ttcgtgtttc catgctgtta 1080
127     gatgatgctg aaaatgagac cgcttccatt ttgatgtctg ggtttcgtca gatgattcac 1140
128     atgttcaata cggaaaatcc tgattctcaa gctgccaac aggagctcgc agcacaagct 1200
129     agagcagcga aagccgctgg agatgacagt gctgctgcag cgctggcaga tgctcagaaa 1260
130     gctttagaag cggctctagg taaagctggg caacaacagg gcataactcaa tgctttggga 1320
131     cagatcgctt ctgctgctgt tgtgagcgca ggagtcctcc cgctgcagca agttctatgg 1380
132     atccgagct                                     1389
133     <210> SEQ ID NO 5
134     <211> LENGTH: 63
135     <212> TYPE: DNA
136     <213> ORGANISM: Chlamydia pneumoniae
137     <400> SEQUENCE: 5
138     cggtaccaag cttacgtaga acaaaaactc atctcagaag aggatctgaa tagcgggt 60
139     gac
140     <210> SEQ ID NO 6
141     <211> LENGTH: 18
142     <212> TYPE: DNA
143     <213> ORGANISM: Chlamydia pneumoniae
144     <400> SEQUENCE: 6

```

RECEIVED
MAR 20 2000
TC 1600 MAIL ROOM

PAGE: 4

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/391,606

DATE: 03/07/2000
TIME: 13:47:56

Input Set: I391606.RAW

```

145      catcatcatc atcatcat                                18
146 <210> SEQ ID NO 7
147 <211> LENGTH: 217
148 <212> TYPE: PRT
149 <213> ORGANISM: Chlamydia pneumoniae
150 <400> SEQUENCE: 7
151      Met Thr Lys Lys His Tyr Ala Trp Val Val Glu Gly Ile Leu Asn Arg
152           1              5              10              15
153      Leu Pro Lys Gln Phe Phe Val Lys Cys Ser Val Val Asp Trp Asn Thr
154           20              25              30
155      Phe Val Pro Ser Glu Thr Ser Thr Thr Glu Lys Ala Ala Thr Asn Ala
156           35              40              45
157      Met Lys Tyr Lys Tyr Cys Val Trp Gln Trp Leu Val Gly Lys His Ser
158           50              55              60
159      Gln Val Pro Trp Ile Asn Gly Gln Lys Lys Pro Leu Tyr Leu Tyr Gly
160           65              70              75              80
161      Ala Phe Leu Met Asn Pro Leu Ala Lys Ala Thr Lys Thr Thr Leu Asn
162           85              90              95
163      Gly Lys Glu Asn Leu Ala Trp Phe Ile Gly Gly Thr Leu Gly Gly Leu
164           100             105             110
165      Arg Lys Ala Gly Asp Trp Ser Ala Thr Val Arg Tyr Glu Tyr Val Glu
166           115             120             125
167      Ala Leu Ser Val Pro Glu Ile Asp Val Ser Gly Ile Gly Arg Gly Asn
168           130             135             140
169      Leu Leu Lys Phe Trp Phe Ala Gln Ala Ile Ala Ala Asn Tyr Asp Pro
170      145              150              155              160
171      Lys Glu Ala Asn Ser Phe Thr Asn Tyr Lys Gly Phe Ser Ala Leu Tyr
172           165             170             175
173      Met Tyr Gly Ile Thr Asp Ser Leu Ser Phe Arg Ala Tyr Gly Ala Tyr
174           180             185             190
175      Ser Lys Pro Ala Asn Asp Lys Leu Gly Ser Asp Phe Thr Phe Arg Lys
176           195             200             205
177      Phe Asp Leu Gly Ile Ile Ser Ala Phe
178      210              215
179 <210> SEQ ID NO 8
180 <211> LENGTH: 490
181 <212> TYPE: PRT
182 <213> ORGANISM: Chlamydia pneumoniae
183 <400> SEQUENCE: 8
184      Met Val Asn Pro Ile Gly Pro Gly Pro Ile Asp Glu Thr Glu Arg Thr
185           1              5              10              15
186      Pro Pro Ala Asp Leu Ser Ala Gln Gly Leu Glu Ala Ser Ala Ala Asn
187           20              25              30
188      Lys Ser Ala Glu Ala Gln Arg Ile Ala Gly Ala Glu Ala Lys Pro Lys
189           35              40              45
190      Glu Ser Lys Thr Asp Ser Val Glu Arg Trp Ser Ile Leu Arg Ser Ala
191           50              55              60
192      Val Asn Ala Leu Met Ser Leu Ala Asp Lys Leu Gly Ile Ala Ser Ser
193           65              70              75              80
194      Asn Ser Ser Ser Ser Thr Ser Arg Ser Ala Asp Val Asp Ser Thr Thr

```

PAGE: 5

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/391,606

DATE: 03/07/2000

TIME: 13:47:56

Input Set: I391606.RAW

195				85				90				95			
196	Ala	Thr	Ala	Pro	Thr	Pro	Pro	Pro	Thr	Ser	Asp	Asp	Tyr	Lys	Thr
197				100				105				110			
198	Gln	Ala	Gln	Thr	Ala	Tyr	Asp	Thr	Ile	Phe	Thr	Ser	Thr	Ser	Leu
199				115				120				125			
200	Asp	Ile	Gln	Ala	Ala	Leu	Val	Ser	Leu	Gln	Asp	Ala	Val	Thr	Asn
201				130				135				140			
202	Lys	Asp	Thr	Ala	Ala	Thr	Asp	Glu	Glu	Thr	Ala	Ile	Ala	Ala	Glu
203							150				155				160
204	Glu	Thr	Lys	Asn	Ala	Asp	Ala	Ile	Lys	Val	Gly	Ala	Gln	Ile	Thr
205				165				170							175
206	Leu	Ala	Lys	Tyr	Ala	Ser	Asp	Asn	Gln	Ala	Ile	Leu	Asp	Ser	Leu
207				180				185				190			
208	Lys	Leu	Thr	Ser	Phe	Asp	Leu	Leu	Gln	Thr	Ala	Leu	Leu	Gln	Ser
209				195				200				205			
210	Ala	Asn	Asn	Asn	Lys	Ala	Ala	Glu	Leu	Leu	Lys	Glu	Met	Gln	Asp
211				210				215				220			
212	Pro	Val	Val	Pro	Gly	Lys	Thr	Pro	Ala	Ile	Ala	Gln	Ser	Leu	Val
213							230				235				240
214	Gln	Thr	Asp	Ala	Thr	Ala	Thr	Gln	Ile	Glu	Lys	Asp	Gly	Asn	Ala
215				245				250							255
216	Gly	Asp	Ala	Tyr	Phe	Ala	Gly	Gln	Asn	Ala	Ser	Gly	Ala	Val	Glu
217				260				265				270			
218	Ala	Lys	Ser	Asn	Asn	Ser	Ile	Ser	Asn	Ile	Asp	Ser	Ala	Lys	Ala
219				275				280				285			
220	Ile	Ala	Thr	Ala	Lys	Thr	Gln	Ile	Ala	Glu	Ala	Gln	Lys	Lys	Phe
221				290				295				300			
222	Asp	Ser	Pro	Ile	Leu	Gln	Glu	Ala	Glu	Gln	Met	Val	Ile	Gln	Ala
223							310				315				320
224	Lys	Asp	Leu	Lys	Asn	Ile	Lys	Pro	Ala	Asp	Gly	Ser	Asp	Val	Pro
225				325				330							335
226	Pro	Gly	Thr	Thr	Val	Gly	Gly	Ser	Lys	Gln	Gln	Gly	Ser	Ser	Ile
227				340				345				350			
228	Ser	Ile	Arg	Val	Ser	Met	Leu	Leu	Asp	Asp	Ala	Glu	Asn	Glu	Thr
229				355				360				365			
230	Ser	Ile	Leu	Met	Ser	Gly	Phe	Arg	Gln	Met	Ile	His	Met	Phe	Asn
231				370				375				380			
232	Glu	Asn	Pro	Asp	Ser	Gln	Ala	Ala	Gln	Gln	Glu	Leu	Ala	Ala	Gln
233							390				395				400
234	Arg	Ala	Ala	Lys	Ala	Ala	Gly	Asp	Asp	Ser	Ala	Ala	Ala	Ala	Leu
235				405				410							415
236	Asp	Ala	Gln	Lys	Ala	Leu	Glu	Ala	Ala	Leu	Gly	Lys	Ala	Gly	Gln
237				420				425				430			
238	Gln	Gly	Ile	Leu	Asn	Ala	Leu	Gly	Gln	Ile	Ala	Ser	Ala	Ala	Val
239				435				440				445			
240	Ser	Ala	Gly	Val	Leu	Pro	Leu	Gln	Gln	Val	Leu	Trp	Ile	Arg	Ala
241				450				455				460			
242	Tyr	Gln	Ala	Tyr	Val	Glu	Gln	Lys	Leu	Ile	Ser	Glu	Glu	Asp	Leu
243				465				470			475				480
244	Ser	Ala	Val	Asp	His	His	His	His	His	His	His				

PAGE: 6

VERIFICATION SUMMARY
PATENT APPLICATION US/09/391,606

DATE: 03/07/2000
TIME: 13:47:56

Input Set: I391606.RAW

Line ? Error/Warning

Original Text
